WHAT IS CLAIMED IS:

1. A shock detector for an optical disc recorder, the shock detector comprising:

a first detecting unit for detecting an amplitude of a first kind of reference signal filtered and for outputting a first detecting signal;

a second detecting unit for detecting a level of a second kind of reference signal and outputting a second detecting signal;

a third detecting unit for detecting a revolution of a third kind of reference signal and outputting a third detecting signal; and

a judging unit for receiving the first, the second and the third detecting signals, and for enabling a shock signal when the first, the second and the third detecting signals are simultaneously enabled.

2. The shock detector according to claim 1, wherein the first detecting unit comprises:

a band-pass filter for receiving the first kind of reference signal and outputting a first eigenvalue; and

hysteresis comparators for receiving the first eigenvalue, enabling the first detecting signal when the first eigenvalue is greater than a first high threshold value or smaller than a second low threshold value, and disabling the first detecting signal when the first eigenvalue is smaller than a first low threshold value and greater than a second high threshold value;

wherein the first low threshold value is greater than the second high

threshold value.

3. The shock detector according to claim 1, wherein the first detecting unit comprises:

a band-pass filter for receiving the first kind of reference signal and outputting a first eigenvalue; and

comparators for receiving the first eigenvalue, enabling the first detecting signal when the first eigenvalue is greater than a first threshold value or smaller than a second threshold value, and disabling the first detecting signal when the first eigenvalue is smaller than the first threshold value and greater than the second threshold value;

wherein the first threshold value is greater than the second threshold value.

4. The shock detector according to claim 2, wherein the first kind of reference signal is a tracking error signal.

5. The shock detector according to claim 2, wherein the first kind of reference signal is a focusing error signal.

6. The shock detector according to claim 2, wherein the first kind of reference signal is a central error signal.

7. The shock detector according to claim 1, wherein the second detecting unit comprises:

a low-pass filter for receiving the second kind of reference signal and outputting an average value;

a subtracter for computing differences between the second kind of reference

signal and the average value and outputting the difference as a second eigenvalue; and

a hysteresis comparator for receiving the second eigenvalue, enabling the second detecting signal when the second eigenvalue is greater than a third high threshold value, and disabling the second detecting signal when the second eigenvalue is smaller than a third low threshold value.

8. The shock detector according to claim 1, wherein the second detecting unit comprises:

a low-pass filter for receiving the second kind of reference signal and outputting an average value;

a subtracter for computing differences between the second kind of reference signal and the average value and outputting the difference as a second eigenvalue; and

a comparator for receiving the second eigenvalue, enabling the second detecting signal when the second eigenvalue is greater than a third threshold value, and disabling the second detecting signal when the second eigenvalue is smaller than the third threshold value.

9. The shock detector according to claim 7, wherein the second kind of reference signal is a sub-beam sum signal.

10. The shock detector according to claim 7, wherein the second kind of reference signal is a RF ripple signal.

11. The shock detector according to claim 1, wherein the third detecting unit comprises:

a counter for receiving the third kind of reference signal and outputting revolution length of the third kind of reference signal;

an averaging unit for receiving the revolution length and generating an average signal;

a subtracter for computing difference between the revolution length and the average signal, and outputting the difference as a third eigenvalue; and

a hysteresis comparator for receiving the third eigenvalue, enabling the third detecting signal when the third eigenvalue is greater than a fourth high threshold value, and disabling the third detecting signal when the third eigenvalue is smaller than a fourth low threshold value.

12. The shock detector according to claim 1, wherein the third detecting unit comprises:

a counter for receiving the third kind of reference signal and outputting revolution length of the third kind of reference signal;

an averaging unit for receiving the revolution length and generating an average signal;

a subtracter for computing difference between the revolution length and the average signal, and outputting the difference as a third eigenvalue; and

a comparator for receiving the third eigenvalue, enabling the third detecting signal when the third eigenvalue is greater than a fourth threshold

value, and disabling the third detecting signal when the third eigenvalue is smaller than the fourth threshold value.

13. The shock detector according to claim 11, wherein the third kind of reference signal is a spindle motor rotating frequency identifying signal.

14. The shock detector according to claim 1, wherein the judging unit is an AND gate.

15. A method for controlling optical disc recording according to a shock signal to keep the recording quality, the shock signal being enabled while a shock level is greater a threshold, the method comprising the steps of:

executing normal recording process when the shock signal is disabled and a recording mode is a normal mode;

changing the recording mode as an interrupt mode and enabling an interrupt recording process when the shock signal is enabled and the recording mode is the normal mode; and

detecting the shock signal when the shock signal is enabled during the interrupt mode; and

changing the recording mode as the normal mode and enabling a link recording process when the shock signal is disabled during the interrupt mode.

16. The method according to claim 15, further comprising the step of setting a servo-loop with a high gain when the recording mode is the interrupt mode.

17. The method according to claim 16, further comprising the step of setting a

servo-loop with a normal gain when the recording mode is the normal mode.

18. The method according to claim 15, further comprising the step of storing N blocks of encoded buffer data when the interrupt recording process is enabled.

19. The method according to claim 18, further comprising the step of starting recording the stored N blocks of encoded buffer data from the N-th block prior to a stop-writing position.

20. A shock detector for an optical disc recorder, the shock detector comprising:

a detecting unit for detecting a revolution of a reference signal and outputting a detecting signal a shock signal.

21. The shock detector according to claim 20, wherein the reference signal is a spindle motor rotating frequency identifying signal.

22. The shock detector according to claim 21, wherein the detecting unit comprises:

a counter for receiving the reference signal and outputting revolution length of the reference signal;

an averaging unit for receiving the revolution length and generating an average signal;

a subtracter for computing difference between the revolution length and the average signal, and outputting the difference as an eigenvalue; and

a hysteresis comparator for receiving the eigenvalue, enabling the detecting signal when the eigenvalue is greater than a high threshold value, and

disabling the detecting signal when the eigenvalue is smaller than a low threshold value.

23. The shock detector according to claim 21, wherein the detecting unit comprises:

a counter for receiving the reference signal and outputting revolution length of the reference signal;

an averaging unit for receiving the revolution length and generating an average signal;

a subtracter for computing difference between the revolution length and the average signal, and outputting the difference as an eigenvalue; and

a comparator for receiving the eigenvalue, enabling the detecting signal when the eigenvalue is greater than a threshold value, and disabling the detecting signal when the eigenvalue is smaller than the threshold value.

24. A method for controlling optical disc recording according to a shock signal to keep the recording quality, the shock signal being enabled while a shock level is greater a threshold, the method comprising the steps of:

executing normal recording process when the shock signal is disabled and a recording mode is a normal mode;

changing the recording mode as an interrupt mode and enabling an interrupt recording process when the shock signal is enabled and the recording mode is the normal mode;

storing N blocks of encoded buffer data when the interrupt recording process is enabled;

detecting the shock signal when the shock signal is enabled during the interrupt mode;

changing the recording mode as the normal mode and enabling a link recording process when the shock signal is disabled during the interrupt mode; and

starting recording the stored N blocks of encoded buffer data from the N-th block prior to a stop-writing position.